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ABSTRACT

The development of local norms using the Illinois Test of Psycholinguistic Abilities was part of a larger study, the purpose of which was to identify the percentage of Arizona school children having a handicap. The first step in this part of the project, which involved screening for communication disorders, was the selection of tests to identify language disorders. Step 2, the development of criteria for identifying the disorder, raised the question of when such a disorder should be considered pathological and when it should be considered an identifying feature of some dialect of English. The main question, however, was whether a test developed for one population is valid when administered to another. The Auditory Association and Grammatical Closure subtests of the ITPA were administered to a random selection of subjects representing the Arizona public school population. Subgroups differences appeared chiefly across ethnic boundaries. From this it is concluded that a test is valid for a specific group only if relevant norms have been developed for that group. The local norms and other statistics on the study are tabulated at the end of the report. (AM)

Development of Local Language Norms for Papago Indians, Mexican-Americans, Blacks, and Anglos

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The development of local norms using the Illinois Test of Psycholinguistic Abilities was part of a larger study known as the Arizona Prevalence Study. The Arizona Prevalence Study was conducted by the Arizona State Department of Education, division of Special Education in co-operation with the Pima County Superintendent of School's office. This project was funded by Title VI B of the Educational Handicapped Act, and Regional Resource Center Flow Through Funds. The purpose of this study was to identify the percentage of school children residing in Arizona having a handicap. This handicap could be one of mental retardation, learning disability, communication disorder, deafness, blindness, or a combination, thereof. The author's responsibilities in regard to the screening for communication disorders were to select a test of language and to determine the criteria for a language disorder. The population being sampled consisted of Papago Indians, Mexican-Americans, Blacks, and Anglos in grades 1, 3, 5, 7, and 9.

The first step in this project was the selection of a test or tests to identify language disorders. At the present time there does not appear to be one specific test designed to identify/screen for conceptual, syntactical and morphological language problems of children. Currently the most popular test for the diagnosis of a language disorder is the ITPA. The twelve subtests of the ITPA take approximately 60-90 minutes to administer. The subtests were designed and are being used for generating a psycholinguistic profile and subsequent diagnosis of a language disorder. The Auditory Association subtest which measures the child's ability to relate auditorily received information in a meaningful way, and the Grammatic Closure subtest which measures the child's syntactical and morphological skills appear to offer a quick, valid, and reliable index of conceptual, syntactical and morphological language abilities for a study such as ours. For example, corrected for restricted intelligence range the internal consistency coefficient at age

8-7/9-1 for Auditory Association is .92 and for Grammatic Closure it is .82. The correlation of these two subtests with the overall test at the same age range is .70 for Auditory Association and .66 for Grammatic Closure. These correlations are representive of those reported across the age range tested in our study. Furthermore, the fact that the nor

based upon the same population allows the results from these two subtests to be compared. Thus we selected these two subtests to screen for language disorders in the Arizona Prevalence Study.

The second step which involved the development of criteria for identifying a language disorder posed a definite problem. This problem was: when should the language of a child who speaks a dialectal form of English be labeled as defective and when is it considered a natural consequence of his or her linguistic environment? One position is that any child, regardless of linguistic background, who did not possess standard American English had a language impairment. We prefer not to take that position in regard to language disorders.

Independently, both Joan Baratz (1967) and William Labov (1969) have conducted extensive research in the area of American English dialects. Those authors agree that culturally different children, particularly the economically disadvantaged Black child, posses different though complex language patterns. Both authors emphasize that these differences in grammar and pronunciation are the result of dialectal patterns and should not be described as defieiencies or abnormalities. Labov adds that most current testing methods are unreliable and heavily biased against Black students. The authors of this paper agree with Labov's basic position and add that current language tests are biased against all groups who possess dialectal patterns of English.

As discussed by Weiner and Hoock article (1973), a test is valid only for a particular population, the population upon which it was standardized. When a test is administered to a population that differs from that upon which it was standardized there is need to verify the validity of norms for the new population.

This problem presently exists with published tests of language when they are used with children who possess dialectal English patterns. Instead of developing a new language test for the Arizona Prevalence Study a standard test was selected and local norms developed.

The norms of the Revised ITPA were developed on a sample of 962 children residing in Bloomington, Danville, Decatur, and Urbana, Illinois, and Madison, Wisconsin. These norms were based upon "only those children demonstrating average intellectual functioning, average school achievement, average characteristics of personal-social adjustment, sensory-motor integrity, and coming from English speaking families" (Paraskevopoulos and Kirk, 1969). Only approximately four percent of the subjects were Black. This figure is significantly lower than the proportion of Blacks living in the five communities and the United States as a whole. No other dialectal groups were included in the sample. Today these are still the only norms available for interperting the results of the ITPA. We raise the question as to whether such norms are appropriate for identifying language disorders in Papago Indian, Mexican-American, Black, and Anglo children residing in Arisona.

There have been a limited number of studies reported in which the ITPA was used with various ethnic groups. These studies have been directed towards reporting profiles and strengths and weaknesses rather than attempting to develop specific norms for an individual group. Ryckman (1966) used the Experimental Edition of the ITPA to compare middle and lower socioeconomic Black children. Further profiles have been obtained for Head Start Black and Mexican-American children using the revised ITPA (Kirk and Kirk, 1972). Finally, Lombardi (1970) conducted a study with first and third grade Papago Indian children residing in Pima County, Arizona. More significantly than the other profiles generated from studies of other ethnic groups the Papago Indians performed the poorest on the Auditory Association and Grammatic Closure subtests. The author concluded that these children had deficits in the Auditory-Vocal channel. He made no

distinction between children with a specific language deficit and those children needing English as a second language. This study attempts to make such a distinction.

The subjects for this study were 976 children randomly selected according to stratification on the following variables: ethnicity, urban-rural, sex, and age (grades 1, 3, 5, 7 and 9). As previously mentioned the ethnic groups were Papago Indians, Mexican-Americans, Blacks, and Anglos. Both Mexican-American and Anglo subjects were sampled according to urban and rural residences. Only rural Papago Indians were selected since a very small proportion lived in Tucson. And only urban Blacks were sampled since a very small number were rural residents. (Table 1)

Since the subjects were randomly selected to represent the Arizona public school population, the sample was not screened for normal intellectual functioning. Unlike the Kirk and Kirk norms where the children were of normal intelligence a percentage of children from our sample were functioning below the first standard deviation from the mean on the Revised WISC. Furthermore, approximately half of our sample came from non-English speaking or bilingual homes.

The Auditory Association and the Grammatic Closure subtest of the ITPA were administered to the subjects between January, 1974, and June, 1974, according to the procedures described in the manual. All subjects were tested by trained speech and language clinicians. The majority of the subjects were tested by two clinicians, while one additional clinician tested 13 subjects. Most of the testing was conducted in the schools, while a few subjects were tested in their home.

A brief look at several tables will indicate the advantages and effects of having geographic and/or special subgroup norms available.

For example, Table 2 is a display of the means and standard deviations of the Auditory Association Raw Scores, broken down by grade, sex, ethnic group, and urban vs rural. Without getting into detail, it can be seen that sex differences are small, urban-rural differences are small, but some large differences occurs among ethnic groups. The exact nature of these differences is unimportant to our present study. What is important is that sub-group differences do appear. Therefore, it is unfair to make decision by comparing a given child to the overall population, even at a given grade level.

What is also important is that the interpretation given to the scores will vary, depending upon which group the individual child is compared. Table 3 will demonstrate this for Auditory Association. In order to cast Table 3, three separate "norms" were created. In Procedure I, the ITPA norms were used. Procedure II utilized geographic norms; and Procedure III was completed with the use of specific group norms. Thus, in I the child was compared with children of his age level according to ITPA norms and the percentages of the sample considered "below the cut-off" point were listed in the Table. As can be seen the Blacks, Mexican-American and Papago Indians have greater proprotions of children who would be considered lower than their comparable Anglo peers. Particularly note the Papago Indians who have up to 96% of various cells of children "failing" by these criteria. (Incidentally a fail included not merely being down 1 standard deviation on the subtest, according to ITPA norms, but being down 1 standard deviation plus 1 standard error. So these represent conservative decision making criteria.)

In Procedure II one can observe the effect of comparing the child only with those from Arizona at a given grade level and sex. For the Papago Indians the percentages of "fails" is much less. Thus, application of geographic norms tends to reduce the number of children who would be considered "disordered" as compared to using the ITPA norms.

The application of sub-group norms reduce this number even more. In this instance the child is compared only within his or her own grade, sex, and ethnic group. Again the number of "failures" reduces drastically in the Papago group.

The same phonomen occur when looking at Grammatic Closure results. The details of difference among groups, or the significance of difference between groups is not our prime concern. Our concern is that various tests are used to screen (or diagnosis) children for language problems. Based on the interpretation of these scores decisions are made about programing and/or placement. It is apparent that we must ask ourselves the question "to whom do I wish to compare this child?" whenever interpretations are made.

For example, if one wishes to know whether a child is demonstrating difficulty in morphological and syntactical usage in standard English, one could use the ITPA Grammatic Closure norms, knowing that he would be identifying children whose English language usage was variant for a variety of reasons. If it is important for that child to be skilled in standard English usage, then children so designated could be given language stimulation programs, English as a Second Language programs, or whatever was deemed necessary after formal assessment. If one would want to know how the child compares with his local peers, one could use geographic norms to help establish needs for group instructional program in a given grade. But if one should wish to identify language disabled children, i.e. those with true language disorders, then he would want to compare them only with their comparable age, sex, geographic and ethnic sub-group.

The authors hope in this study only to make the point that norms must be appropriate and relevant. In fact, the need for the development of specific group norms is so aptly stated by Paraskevopoulas and Kirk (1969) when they wrote "Norms must be based on the performance of groups of individuals with which it is sensible to compare the performance of the persons to be evaluated.

Thus, in theory, norms should be collected for every sub-group with which an individual's test scores might reasonably be compared. The use of irrelevant norms can be not only meaningless, but deceptive."

Table 1

NUMBER OF SUBJECTS BY GRADE AND SUBGROUP IN THE ARIZONA PREVALENCE STUDY

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	12	12	12	13	25	23	10	13	10	11	26	27
3	13	13	13	13	20	22	12	14	9	11	27	26
5	13	13	13	13	23	24	13	13	12	11	24	29
7	13	14	13	14	26	27	12	13	12	12	25	26
9	12	13	10	10	25	23	11	9	9	9	25	25

Table 2

Means and Standard Deviations of ITPA Auditory Association Scores by Grade and Subgroup in the Arizona Prevalence Study

Grade		ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
		Urban		Rural		Urban		Urban		Rural		Rural	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	$\bar{X}$	27.9	25.9	27.5	25.7	21.4	20.1	21.6	16.8	22.0	20.8	17.5	15.8
	SD	5.2	3.9	2.5	4.0	5.1	3.7	3.5	4.4	4.3	4.2	4.8	5.8
3	$\bar{X}$	33.6	30.2	31.4	31.1	28.2	26.9	26.2	25.4	24.8	24.3	23.2	25.0
	SD	2.9	4.8	5.5	4.2	4.5	3.6	4.7	4.7	3.6	3.2	3.5	3.2
5	$\bar{X}$	35.8	36.8	35.7	35.4	32.2	27.9	28.2	30.3	26.5	28.6	26.8	26.5
	SD	3.7	2.7	3.1	3.8	4.9	3.8	5.9	3.7	3.8	5.2	3.1	4.1
7	$\bar{X}$	38.3	36.9	37.5	35.9	34.6	32.9	31.0	32.2	30.8	32.9	27.8	28.5
	SD	1.1	2.9	2.1	3.3	5.3	4.6	6.8	5.3	9.1	2.7	4.5	5.1
9	$\bar{X}$	38.0	37.7	38.8	39.1	34.3	32.4	35.9	32.9	32.4	33.0	31.9	31.8
	SD	2.2	2.3	1.9	1.4	5.7	4.4	3.4	2.7	5.8	3.6	3.4	4.0

Table 3

Percent of Students Below Cut-offs on ITPA Auditory Association by Grade and Subgroup in Arizona Prevalence Study

PROCEDURE I: ITPA NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	0	8	0	15	28	39	40	62	30	36	58	70
3	0	8	8	8	5	5	25	7	22	27	44	42
5	8	0	8	15	30	41	54	38	50	64	92	79
7	0	29	8	21	38	56	50	54	67	67	88	96
9	0	15	0	0	46	57	56	78	67	67	80	76

PROCEDURE II: ARIZONA NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	0	0	0	0	12	9	0	38	10	9	35	33
3	0	8	8	0	5	5	25	7	22	27	41	42
5	0	0	0	0	4	21	58	8	42	27	21	28
7	0	0	0	7	4	15	17	23	17	0	44	51
9	0	0	0	0	12	22	9	11	22	22	24	36

PROCEDURE III: GROUP NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	17	17	17	23	12	13	20	23	20	27	19	19
3	13	8	8	8	15	18	25	7	22	27	11	12
5	23	8	8	15	17	21	8	23	25	18	17	17
7	31	28	15	7	4	23	17	23	8	25	20	19
9	17	15	10	20	10	17	18	23	22	22	20	12

Table 4

Means and Standard Deviations of the ITPA Grammatic Closure Scores by Grade and Subgroup in the Arizona Prevalence Study

Grade		ANGLO				BLACK				MEXICAN-AMERICAN				PAPAGO	
		Urban		Rural		Urban		Urban		Rural		Rural			
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		
1	$\bar{X}$	23.3	21.6	19.9	21.0	16.3	15.6	18.2	13.9	15.9	15.2	11.2	11.2		
	SD	7.8	4.1	3.2	3.1	4.9	4.5	5.7	4.9	5.1	4.2	5.0	3.9		
3	$\bar{X}$	27.8	26.1	26.5	25.7	21.4	21.0	21.2	22.3	19.3	20.8	15.8	17.4		
	SD	3.2	5.5	3.1	2.6	5.7	5.0	4.5	6.1	4.6	4.9	3.7	4.8		
5	$\bar{X}$	30.2	29.8	27.3	28.9	23.4	23.5	22.1	22.8	19.8	25.2	20.7	22.2		
	SD	3.9	2.1	2.8	2.7	6.2	4.2	3.9	5.7	5.2	3.5	4.2	3.4		
7	$\bar{X}$	31.0	31.5	30.1	30.1	25.9	25.8	23.2	27.8	25.2	26.6	23.1	23.2		
	SD	1.2	2.4	2.1	2.2	5.6	5.1	4.5	3.5	7.0	2.8	4.3	4.3		
9	$\bar{X}$	30.9	31.6	31.2	31.6	26.7	25.9	27.9	26.7	27.8	29.6	24.9	25.0		
	SD	1.4	1.8	1.7	0.8	5.1	5.4	4.6	3.8	4.2	3.4	4.0	5.0		

Table 5

Percent of Students Below Cut-offs on ITPA Grammatic Closure by Grade and Subgroup in Arizona Prevalence Study

PROCEDURE I: ITPA NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	8	8	8	0	36	35	30	54	40	45	81	81
3	8	8	8	0	44	50	67	36	67	74	96	85
5	23	8	31	15	52	67	85	69	75	45	92	86
7	0	0	25	31	62	65	83	58	75	58	92	88
9	8	8	10	0	52	48	55	67	44	33	80	76

PROCEDURE II: ARIZONA NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	0	0	0	0	12	17	0	23	20	18	35	44
3	0	8	0	0	15	14	8	7	22	9	44	38
5	0	0	0	0	26	29	15	23	33	9	25	38
7	0	0	0	0	12	26	33	8	8	0	32	13
9	0	0	0	0	16	22	9	22	22	11	24	28

PROCEDURE III: GROUP NORMS

	ANGLO				BLACK		MEXICAN-AMERICAN				PAPAGO	
	Urban		Rural		Urban		Urban		Rural		Rural	
GRADE	B	G	B	G	B	G	B	G	B	G	B	G
1	8	8	8	15	20	22	0	23	20	18	19	15
3	8	8	8	23	15	14	8	7	11	9	22	15
5	23	15	8	23	26	21	15	15	17	18	19	14
7	8	12	8	14	12	15	8	23	8	17	24	19
9	8	23	20	10	16	22	9	22	22	11	8	16

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